NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(pursuant to NAC 445A.236)

Permittee Name: Lyon County Utilities
P.O. Box 1699
Dayton, NV 89403

Permit Number: NEV40032

Location: Carson Highlands Estates
2000 Highlands Dr., Moundhouse, Lyon County, NV 89706
Latitude: 39° 12' 35"N, Longitude: 119° 40' 14"W
Township 16N, Range 21E, SE¼ NW¼ Section 31

General: Lyon County Utilities provides water and sewer service to Carson Highlands Estates, which is a manufactured-home community in Moundhouse, Lyon County, NV. The Carson Highlands Estates Wastewater Treatment Plant (WWTP) serves approximately 290 residential connections. There are no commercial or industrial connections. The Division first permitted this WWTP in 1984. A gravity sewer services 210 residential connections located above the WWTP. One lift station located east of the WWTP is used to service the remaining 80 lower residential connections.

The WWTP presently provides secondary (biological) wastewater treatment. The headworks consists of a manually cleaned bar screen, comminutor (grinder) and ultrasonic flow meter (Palmer-Bowlus flume). Main wastewater treatment operations include: aerated flow equalization basin, primary clarification, two rotating biological contactor (RBC) units arranged in series flow and final clarification prior to groundwater disposal. The chlorine contact basin is not fed disinfectant since groundwater disposal is utilized. Waste sludge is stored in an aerated sludge digester basin and is hauled to the Truckee Meadows Water Reclamation Facility (#NV0020150) for further treatment.

The current permit requirements, issued September 8, 1997, limit the effluent to 10 mg/L of total nitrogen as nitrogen. However the existing treatment process is not capable of achieving this limit. Over a two-year period (4th Quarter 2000 through 3rd Quarter 2002 Discharge Monitoring Reports), the effluent level of total nitrogen as nitrogen averaged 24 mg/L, and during this period, all eight quarters were above the total nitrogen as nitrogen permit limit. According to the Division's compliance tracking system, Schedule of Compliance (SOC) requirements Parts I.A.11.a-e have not been submitted to the Division. Specifically, Part I.A.11.b required the facility to have commenced denitrification by March 8, 1998.

The Division last inspected this facility on March 13, 2003. The findings of this compliance inspection confirm that a denitrification system has not been installed. The following photo shows the existing in-line treatment basins and two RBC units at the Carson Highlands WWTP.

Photo #1: Carson Highlands WWTP (headworks not shown)

Flow: The wastewater treatment plant is permitted for 0.068 (30-day avg.) and 0.077 (daily max.) MGD. Presently, flows average around 0.050-0.055 MGD, equivalent to 75-80% of available treatment capacity.

Receiving Water Characteristics: Treated effluent is discharged to the groundwater in a 10-acre disposal site located east-southeast of the WWTP. The disposal site consists of four leachfields with space reserved for a fifth leachfield, if expansion is needed. The facility monitors the groundwater quality in three downgradient wells. Average depth to groundwater is 14 ft. The groundwater flow direction is south-southeast towards the Carson River, which is located 1¼ miles southeast of the WWTP. The facility's monitoring results indicate that the nitrate as nitrogen level in MW-2 and MW-3 has exceeded the State's limit of 10 mg/L. The permit conditions require the facility to remediate the elevated groundwater nitrate levels via a denitrification system. The photo below was taken at MW-3, located at the far eastern edge of the disposal field. From this well, the inlet to the leachfields is located approximately 650 ft. west.

Photo #2: MW-3 (WWTP in background)

Proposed Effluent Limitations and Special Conditions:

Table 1: Plant Discharge Limitations

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD (Influent)	0.068	0.077	Continuous	Flow Meter
BOD_5, mg/L (Influent)	Monitor & Report		Quarterly	Composite
BOD_5, mg/L (Effluent)	30	45	Quarterly	Composite
TSS, mg/L (Influent)	Monitor & Report		Quarterly	Composite
TSS, mg/L (Effluent)	30	45	Quarterly	Composite
Total Nitrogen as N, mg/L (Effluent)	10.0 mg/L		Quarterly/Monthly[1]	Composite
Total Kjeldahl Nitrogen, mg/L (Effluent)	Monitor & Report		Quarterly/Monthly[1]	Composite
Nitrate as Nitrogen, mg/L (Effluent)	Monitor & Report		Quarterly/Monthly[1]	Composite
pH, Std. Units (Effluent)	Between 6.0 & 9.0		Quarterly	Discrete

1. Sampling frequency will increase to monthly upon commencement of operations at the new denitrification plant.

Table 2: Groundwater Monitoring (MW-1, MW-2 & MW-3)

PARAMETER	GROUNDWATER LIMITATIONS	MONITORING REQUIREMENTS	
		Measurement Frequency	Sample Type
TDS, mg/L	Monitor & Report	Quarterly	Discrete
Chlorides, mg/L	Monitor & Report	Quarterly	Discrete
Nitrate as N, mg/L	10.0	Quarterly	Discrete
Total Nitrogen as N, mg/L	Monitor & Report	Quarterly	Discrete
Depth to Groundwater, ft	Monitor & Report	Quarterly	Field Measurement
Groundwater Elevation, ft	Monitor & Report	Quarterly	Field Measurement

Schedule of Compliance Requirements: The Permittee shall submit the following items to the Division for review and approval **(all compliance deliverables shall be addressed to the attention of the Compliance Coordinator, Bureau of Water Pollution Control):**

- Within thirty (30) days of the permit issuance date, the Permittee shall submit a progress report outlining the efforts made to address the Schedule of Compliance requirements, Parts I.A.11.a-e, pursuant to discharge permit #NEV40032, issued September 8, 1997.

- Within ninety (90) days of the permit issuance date, the Permittee shall submit a final plan and construction schedule for providing a denitrification facility at the Carson Highlands Estates WWTP. This plan shall also discuss any new monitoring wells needed to characterize the extent of nitrate contamination from the groundwater study requirement of Part I.A.11.c, pursuant to discharge permit #NEV40032, issued September 8, 1997.

- Within ninety (90) days of startup of the denitrification facility, the Permittee shall submit a revised Operations and Maintenance (O&M) Manual.

Procedures for Public Comment: The Notice of the Division's intent to issue a permit authorizing the operation of this facility, subject to the conditions contained within the permit is being sent to the **Nevada Appeal** and **Fernley Leader-Dayton Courier** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-

stamped faxes, e-mails, or hand-delivered items) to the Division is **May 13, 2003 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination: The Division has made the tentative determination to issue (renew) the proposed groundwater discharge permit for a period of five (5) years. The Permittee is required to construct and commence operation of a denitrification system to protect State groundwater resources.

Prepared by: Mark A. Kaminski, P.E.
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Bureau of Water Pollution Control

Date: April 9, 2003